Applied Quantitative Finance

Mauricio Garita

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Using Python for Financial Analysis

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Mauricio Garita
Universidad Francisco Marroquín
Guatemala City, Guatemala

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I want to thank God, my wife Sonia, Míkel and Maia for being the reason for keeping moving forward.

Introduction

This book is aimed for students, professionals, academics and everyone who wants to learn Python and its application to the stock market. Therefore, the book begins with the simple implementation of Python, advances to statistical methods and ultimately reaches the creation of portfolios.

The book also provides a clear understanding of the different discussions that surge between academic and professional world in the area of finance. As the reader will see, there are references throughout the book so that the learning experience may continue after the book is finished.

When considering the different aspects of programming the author centered on the writing of the code as a whole, so that it can be followed by the reader. This allows a better learning and an implementation of the process by the reader, giving a better knowledge about the process, the errors and how to implement solutions.

As a final note, this book does not aim to be a in-depth finance book or programming book. This book is written from a practitioner point of view from finance using programming. The reader should see and analyze this book from a practitioner perspective, with the purpose of learning the application of different statistical, mathematical and financial concepts in the growing language that is Python.

As an author, this book is an effort to close an important gap for those interested in financial programming and I hope that it opens the doors to new possibilities.

What This Book Is and Is Not

This book is not a theoretical book that will explain each and every detail of each indicator presented. This book centers in applying finance to the different indicators to offer a hands-on experience.

This book does not cover all the aspects of finance. For example, the book is centered in technical, quantitative and risk analysis of the stock market, but it does not cover each and every avenue. This book does not contain options and futures, Montecarlo Simulations and binomial trees. The reason is that this book aims to be an introductory to intermediate level. Considering advanced level there are books far more detailed on this aspects.

This book does not aim to explain programming language to the reader. It explains the easiest way to program a portfolio, a MACD, a VaR and other financial instruments. Also, the code is simple and clean so that the reader is not overwhelmed by programming. I truly believe that we can learn to program if we start from the basics and this book aims for this.

This book does not aim to be perfect. Its aim is to open a discussion considering finance and the growth of the different methods of the internet. Therefore, the book is explained through Yahoo API because it is the present live information at every second. Even though, everything can be elaborated in Excel after uploading the document to Jupyter notebooks or Google Collaboratory.

Finally, during the writing of this book, I began reading different scripts from different authors trying to find the easiest way possible to understand Python. This book is an effort to make things simple.

Thank you for believing in this book. Thank you for giving it the opportunity of being in your hands, in your reading, supporting your future. This book is a tool that I wish I had at the beginning of my career. Simple enough to understand but solid enough to be reliable.

Sincerely, Mauricio Garita

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About the Author

Mauricio Garita began his studies at the Universidad Rafael Landivar in Guatemala studying Economics and Business Administration. Once he graduated, he went to Manchester Business School to study a master's in international business and to el Instituto de Estudios Bursátiles (IEB) to study a master's in asset management. He received his Ph.D. from the Pontificia Universidad de Salamanca focusing in Sociology and Politics writing his thesis on the economic impact of the Civil War in Guatemala.

He has worked with the office of the World Bank in Guatemala focusing on financial and economic aspects, he directed the Department of Business Intelligence in the Secretariat for Central American Economic Integration (SIECA) and the Department of Business Intelligence of the Private Sector (CACIF) at Guatemala. He also created the Department of Academic Relations at the Central American Institute of Fiscal Studies (ICEFI).

In academics, Mauricio has taught at a masters and bachelors level courses focused on economics and finance at the Universidad Rafael Landivar, Universidad del Valle, Universidad del Istmo and lately at Universidad Francisco Marroquin. He was part of the founders of the master's in advanced finance at the Universidad del Valle in Guatemala and researcher and professor in finance at Universidad Francisco Marroquin.

On a business level, he founded Simpleconomics which centers on personal and business finance combined with philosophical views from the stoic philosophy. He is one of the founders of the Stoic Chapter

in Guatemala. He also created a *podcast* with the name *Simpleconomics* which is a podcast focused on finance and philosophy.

His research can be read in Business and Politics, Emerging Economies and Multinational journals to name a few, in the Routledge book written in collaboration with John Spillan and Nichols Virzi, in the Rethinking Taxation in Latin America book by Palgrave Macmillan and in newspapers such as Prensa Libre of Guatemala and the economic magazines such as El Economista and Estrategia y Negocios for Central America.

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